PATENT
ATTORNEY DOCKET NO.: **056291-5241**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:	)	Confirmation No.	**5047**
HENNEQUIN *et al.*	)		
Application No.: **10/573,090**	)	Group Art Unit:	**1624**
Filed: **March 15, 2006**	)	Examiner:	**TRUONG, Tamithom Ngo**
FOR: **QUINAZOLINE DERIVATIVES AS TYROSINE KINASE INHIBITORS**	)		

Date: **June 5, 2009**

PER EXAMINER REQUEST, RESUBMISSION OF SEPTEMBER 2006 IDS PTO-1449 DATA

Pursuant to a telephone request, and as a courtesy to Examiner Truong, submitted herewith is a form PTO-1449 listing the documents and all required information that was listed on the previously submitted PTO-1449 accompanying the Information Disclosure Statement that was filed herein on September 1, 2006. However, the form PTO-1449 submitted herewith *additionally* includes the *optional* identification of the Applicant for each of the Foreign Patent Documents, as requested by Examiner Truong. A copy of each "Foreign Patent Document" and each "Other" document (literature reference) listed on the attached form PTO-1449 was timely filed in this Application with the September 1, 2006 Information Disclosure Statement or earlier, and an electronic copy of each such document is present in the PAIR database for this application as having been filed on September 1, 2006 or earlier.

It is understood that this request by Examiner Truong stemmed from a perception that US PTO "Publications" would remand back to the Examiner any form PTO-1449 that did not include for each listed "*Foreign Patent Document*" the identity of the "patentee" or

"applicant" for that foreign patent document.[1] The original form PTO-1449 submitted on September 1, 2006 was in total compliance with Rules 1.97 and 1.98, and did not include the *optional* "patentee" or "applicant" identification with respect to the listed "*Foreign Patent Documents.*"

The undersigned pointed out to the Examiner that Rule 1.98(b)(4) requires that *foreign* patents and *foreign* published application listed in an IDS "must be identified by the country or patent office which issued the patent or published the application, an appropriate document number, and the publication date indicated on the patent or published application." There is no requirement that the patentee or applicant be listed for "Foreign Patent Documents." The foreign patent document listings on the original September 1, 2006 form PTO-1449 included *all* of this information required by the Rule. The undersigned further pointed out to the Examiner that MPEP § 609, seven paragraphs after quoting Rule 1.98, states that "[o]nce the minimum requirements of 37 CFR 1.97 and 37 CFR 1.98 are met, *the examiner has an obligation to consider the information*" (emphasis added). Nevertheless, and as a courtesy to the Examiner, the undersigned agreed to resubmit the September 1, 2006 form PTO-1449 with an additional column under Foreign Patent Documents identifying the applicant on each of the listed foreign patent documents.

Examiner Truong also indicated to the undersigned in a telephone discussion earlier this week that she could not find a copy of eight of the listed Foreign Patent Documents in the internal Patent Office database, which she identified as document numbers 84, 88, 97, 99, 120, 126, 132 and 133 on the September 1, 2006 form PTO-1449. The undersigned has personally checked the US PTO PAIR electronic database for this application, and hereby personally verifies that an electronic copy of each of the published PCT applications corresponding to such document numbers 84, 88, 97, 99, 120, 126, 132 and 133 is present in the US PTO PAIR database for this application, and noted as having been received on September 1, 2006, except for the published PCT application corresponding to document #97 (WO 01/32651), which was listed in and filed with the form PTO-1449 filed with this application on March 15, 2006, and is present in the PAIR database as of that earlier date.

[1] Any such requirement by "Publications" is not understood, since to date an issued patent does not include the name of the patentee or applicant in the listing of "Foreign Patent Documents" on the face of a granted patent.

To assist the Examiner in locating electronic copies of these eight documents in the PAIR database, attached to this Information Disclosure Statement is a 5-page printout of the "Image File Wrapper" from PAIR on which the undersigned has personally noted the location in that image file of each of the eight foreign patent documents, identified by both document number and the publication number of those published PCT applications. The Examiner will note that the right-hand column on this printout gives the number of pages of each document, which should assist in locating the electronic copy of each of the eight documents. Also attached to this printout is the front page of each of the eight documents in question *printed from this PAIR database*.

In view of all of the above, it is respectfully and *urgently* requested that the Examiner acknowledge consideration of each of the documents on the attached version of the September 1, 2006 PTO-1449 by placing her initials where indicated, and fax a copy of the initialed copy to the undersigned (fax number listed below) prior to the June 11, 2009 due date for the Issue Fee in this application, if at all possible.

If the Examiner has any questions with regard to this filing or any other matter concerning this Application, it is respectfully requested that the Examiner telephone the undersigned at the number listed below.

Inasmuch as this is a courtesy resubmission of a previously submitted form PTO-1449 that was in full compliance with the rules, at the request of the Examiner, no fee should be due for this filing, and this filing should not be considered "Applicant Delay" with respect to the Patent Term Adjustment already accrued in this Application. Nevertheless:

EXCEPT for issue fees payable under 37 C.F.R. § 1.18, the Director is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit

Account 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully Submitted,
Morgan Lewis & Bockius LLP

Date: June 5, 2009
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This application is officially maintained in electronic form. To View: Click the desired Document Description. To Download and Print: Check the desired document(s) and click PDF.

Bibliographic Data

Mail Room Date	Document Code	Document Description	Document Category	Page Count
03-11-2009	**NOA**	**Notice of Allowance and Fees Due (PTOL-85)**	**PROSECUTION**	**5**
03-11-2009	EXIN	Examiner Interview Summary Record (PTOL - 413)	PROSECUTION	1
03-11-2009	NOA	Notice of Allowance and Fees Due (PTOL-85)	PROSECUTION	3
03-11-2009	IIFW	Issue Information including classification, examiner, name, claim, renumbering, etc.	PROSECUTION	1
03-11-2009	1449	List of References cited by applicant and considered by examiner	PROSECUTION	3
03-11-2009	1449	List of References cited by applicant and considered by examiner	PROSECUTION	1
03-11-2009	SRFW	Search information including classification, databases and other search related notes	PROSECUTION	1
03-11-2009	SRNT	Examiner's search strategy and results	PROSECUTION	15
03-11-2009	SRNT	Examiner's search strategy and results	PROSECUTION	1
03-11-2009	1449	List of References cited by applicant and considered by examiner	PROSECUTION	1
03-11-2009	FWCLM	Index of Claims	PROSECUTION	2
03-11-2009	1449	List of References cited by applicant and considered by examiner	PROSECUTION	1
12-01-2008	WFEE	Fee Worksheet (PTO-875)	PROSECUTION	2
12-01-2008	N417	EFS Acknowledgment Receipt	PROSECUTION	3
12-01-2008	NPL	NPL Documents	PROSECUTION	1
12-01-2008	WFEE	Fee Worksheet (PTO-875)	PROSECUTION	1
12-01-2008	WFEE	Fee Worksheet (PTO-875)	PROSECUTION	1
12-01-2008	TRAN.LET	Transmittal Letter	PROSECUTION	2
12-01-2008	IDS	Information Disclosure Statement (IDS) Filed (SB/08)	PROSECUTION	1
12-01-2008	LET.	Miscellaneous Incoming Letter	PROSECUTION	2
12-01-2008	XT/	Extension of Time	PROSECUTION	1
12-01-2008	ELC.	Response to Election / Restriction Filed	PROSECUTION	1
12-01-2008	CLM	Claims	PROSECUTION	3
12-01-2008	REM	Applicant Arguments/Remarks Made in an Amendment	PROSECUTION	4
09-30-2008	CTRS	Requirement for Restriction/Election	PROSECUTION	4
09-30-2008	FWCLM	Index of Claims	PROSECUTION	1
09-30-2008	BIB	Bibliographic Data Sheet	PROSECUTION	1
01-28-2008	TRAN.LET	Transmittal Letter	PROSECUTION	2
01-28-2008	IDS	Information Disclosure Statement (IDS) Filed (SB/08)	PROSECUTION	1
01-28-2008	FOR	Foreign Reference	PRIOR ART	269
01-28-2008	FOR	Foreign Reference	PRIOR ART	286
01-28-2008	FOR	Foreign Reference	PRIOR ART	99
01-28-2008	FOR	Foreign Reference	PRIOR ART	81
01-28-2008	FOR	Foreign Reference	PRIOR ART	166
01-28-2008	FOR	Foreign Reference	PRIOR ART	80
01-28-2008	FOR	Foreign Reference	PRIOR ART	79
01-28-2008	FOR	Foreign Reference	PRIOR ART	90
01-28-2008	FOR	Foreign Reference	PRIOR ART	129
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01-28-2008	FOR	Foreign Reference	PRIOR ART	204
01-28-2008	FOR	Foreign Reference	PRIOR ART	85
01-28-2008	FOR	Foreign Reference	PRIOR ART	78

07-30-2007	APP.FILE.REC	Filing Receipt		PROSECUTION	3
05-10-2007	CFILE	Request for Corrected Filing Receipt		PROSECUTION	4
04-20-2007	IDS	Information Disclosure Statement (IDS) Filed (SB/08)		PROSECUTION	3
04-20-2007	FOR	Foreign Reference		PRIOR ART	16
04-20-2007	FOR	Foreign Reference		PRIOR ART	412
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02-22-2007	NTC.PUB	Notice of Publication		PROSECUTION	1
11-21-2006	APP.FILE.REC	Filing Receipt		PROSECUTION	3
11-21-2006	M903	Notice of DO/EO Acceptance Mailed		PROSECUTION	2
09-07-2006	IDS	Information Disclosure Statement (IDS) Filed (SB/08)		PROSECUTION	8
09-01-2006	IDS	Information Disclosure Statement (IDS) Filed (SB/08)		PROSECUTION	9
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09-01-2006	FOR	Foreign Reference		PRIOR ART	103
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03-15-2006	TRNA	Transmittal of New Application	PROSECUTION	2
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03-15-2006	NPL	NPL Documents	PRIOR ART	13
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03-15-2006	371P	Documents submitted with 371 Applications	PROSECUTION	6
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03-15-2006	371P	Documents submitted with 371 Applications	PROSECUTION	5
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03-15-2006	WFEE	Fee Worksheet (PTO-875)	PROSECUTION	1
03-15-2006	WFEE	Fee Worksheet (PTO-875)	PROSECUTION	1
03-15-2006	WCLM	Claims Worksheet (PTO-2022)	PROSECUTION	1

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
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PCT

(10) International Publication Number
WO 03/040109 A2

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(71) Applicant *(for MG only)*: **ASTRAZENECA UK LIMITED** [GB/GB]; 15 Stanhope Gate, London, Greater London W1K 1LN (GB).

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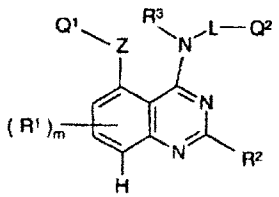
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: QUINAZOLINE DERIVATIVES AS ANTITUMOR AGENTS



(I)

(57) Abstract: The invention concerns quinazoline derivatives of Formula (I); wherein each of Q^1, Q^2, Z, R^1, R^2, R^3, L and m have any of the meanings defined in the description; processes for their preparation, pharmaceutical compositions containing them and their use in the manufacture of a medicament for use in the prevention or treatment of tumours which are sensitive to inhibition of erbB receptor tyrosine kinases.

WO 03/040109 A2

(12) NACH DEM VERTRAG ÜBER DIE INTERNATIONALE ZUSAMMENARBEIT AUF DEM GEBIET DES PATENTWESENS (PCT) VERÖFFENTLICHTE INTERNATIONALE ANMELDUNG

(19) Weltorganisation für geistiges Eigentum
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(43) Internationales Veröffentlichungsdatum
9. Oktober 2003 (09.10.2003)

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(51) Internationale Patentklassifikation[7]: A61K 31/517, C07D 239/94, 405/12, 401/12, 413/12, 403/12, 498/08, 491/08, A61P 35/00

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25. März 2003 (25.03.2003)

(25) Einreichungssprache: Deutsch

(26) Veröffentlichungssprache: Deutsch

(30) Angaben zur Priorität:
102 14 412.5 30. März 2002 (30.03.2002) DE
102 31 711.9 13. Juli 2002 (13.07.2002) DE

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(81) Bestimmungsstaaten *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

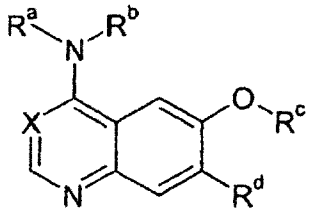
(84) Bestimmungsstaaten *(regional)*: ARIPO-Patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), eurasisches Patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), europäisches Patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI-Patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Veröffentlicht:
— *mit internationalem Recherchenbericht*

Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

(54) **Title:** 4-(N-PHENYLAMINO)-QUINAZOLINES / QUINOLINES AS TYROSINE KINASE INHIBITORS

(54) **Bezeichnung:** 4- (N-PHENYLAMINO) -CHINAZOLINE/CHINOLINE ALS TYROSINKINASEINHIBITOREN



(I)

(57) **Abstract:** The invention relates to the bicyclic heterocycles of the general formula (I), wherein R^a, R^b, R^c, R^d and X are defined as in claim 1, the tautomers, stereoisomers, mixtures and salts thereof, especially the physiologically acceptable salts thereof with inorganic or organic acids, which have valuable pharmacological properties, especially an inhibitory effect on tyrosine kinase-mediated signal transduction. The invention also relates to the use of the bicyclic heterocycles in the treatment of diseases, especially cancer diseases and of benign prostate hyperplasia (BPH), of diseases of the lung and the respiratory system, and further to the production of the bicyclic heterocycles.

(57) **Zusammenfassung:** Die vorliegende Erfindung betrifft bicyclische Heterocyclen der allgemeinen Formel (I), in der R^a, R^b, R^c, R^d und X wie im Anspruch 1 definiert sind, deren Tautomere, deren Stereoisomere, deren Gemische und deren Salze, insbesondere deren physiologisch verträgliche Salze mit anorganischen oder organischen Säuren, welche wertvolle pharmakologische Eigenschaften aufweisen, insbesondere eine Hemmwirkung auf die durch Tyrosinkinasen vermittelte Signaltransduktion, deren Verwendung zur Behandlung von Krankheiten, insbesondere von Tumorerkrankungen sowie der benignen Prostatahyperplasie (BPH), von Erkrankungen der Lunge und der Atemwege und deren Herstellung.

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(51) International Patent Classification[7]: C07D 239/94, 401/12, 401/14, 403/14, 491/04, A61K 31/517, A61P 35/00

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0230086.1	24 December 2002 (24.12.2002)	GB
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(71) Applicant *(for AE, AG, AL, AM, AT, AU, AZ, BA, BB, BE, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CY, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, FR, GB, GD, GE, GH, GM, GR, HR, HU, ID, IE, IL, IN, IS, IT, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MC, MD, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SZ, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW only)*: **ASTRAZENECA AB** [SE/SE]; Sodertalje, S-151 85 (SE).

(71) Applicant *(for MG only)*: **ASTRAZENECA UK LIMITED** [GB/GB]; 15 Stanhope Gate, London, Greater London W1K 1LN (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **BRADBURY, Robert, Hugh** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB). **HENNEQUIN, Laurent, Francois, Andre** [FR/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB). **KETTLE, Jason, Grant** [GB/GB]; AstraZeneca R & D Alderley, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB).

(74) Agent: **ASTRAZENECA**; Global Intellectual Property, Mereside, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
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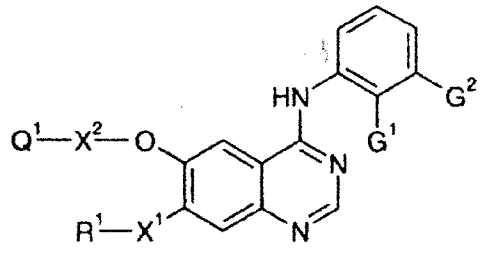
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: 4-ANILINO QUINAZOLINE DERIVATIVES AS ANTIPROLIFERATIVE AGENTS



(I)

(57) Abstract: The invention concerns quinazoline derivatives of Formula (I) wherein each of Q^1, Z, R^1 and Q^2 have any of the meanings defined in the description; processes for their preparation, pharmaceutical compositions containing them and their use in the manufacture of a medicament for use as an antiproliferative agent in the prevention or treatment of tumours which are sensitive to inhibition of erbB receptor tyrosine kinases.

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PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 :		(11) International Publication Number:	WO 00/31048
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(21) International Application Number: PCT/US99/22116

(22) International Filing Date: 23 September 1999 (23.09.99)

(30) Priority Data:
60/109.065 19 November 1998 (19.11.98) US

(71) Applicant *(for all designated States except US)*: WARNER-LAMBERT COMPANY [US/US]; 201 Tabor Road, Morris Plains, NJ 07950 (US).

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(74) Agents: RYAN, M., Andrea; Warner-Lambert Company, 201 Tabor Road, Morris Plains, NJ 07950 (US) et al.

(81) Designated States: AE, AL, AU, BA, BB, BG, BR, CA, CN, CR, CU, CZ, DM, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, TZ, UA, US, UZ, VN, YU, ZA, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: N-[4-(3-CHLORO-4-FLUORO-PHENYLAMINO)-7-(3-MORPHOLIN-4-YL-PROPOXY)-QUINAZOLIN-6-YL]-ACRYLAMIDE, AN IRREVERSIBLE INHIBITOR OF TYROSINE KINASES

(57) Abstract

The present invention provides the compound N-[4-(3-chloro -4-fluoro- phenylamino) -7-(3-morpholin -4-yl-propoxy) -quinazolin-6- yl]-acrylamide that is an irreversible inhibitor of tyrosine kinases. Also provided is a method of treating cancer, restenosis, atherosclerosis, endometriosis, and psoriasis using the compound N-[4-(3-chloro -4-fluoro-phenylamino) -7-(3-morpholin -4-yl-propoxy) -quinazolin -6-yl]-acrylamide, and a pharmaceutical composition that contains the compound N-[4-(3-chloro -4-fluoro-phenylamino) -7-(3-morpholin -4-yl-propoxy) -quinazolin-6-yl] -acrylamide.

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WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 :
C07D 239/94, 215/54, 401/12, 413/12, 405/12, A61K 31/517, A61P 35/00

A1

(11) International Publication Number: WO 00/55141

(43) International Publication Date: 21 September 2000 (21.09.00)

(21) International Application Number: PCT/EP00/02228

(22) International Filing Date: 14 March 2000 (14.03.00)

(30) Priority Data:
199 11 509.5 15 March 1999 (15.03.99) DE

(71) Applicant *(for all designated States except US)*: BOEHRINGER INGELHEIM PHARMA KG [DE/DE]; D-55216 Ingelheim/Rhein (DE).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: HIMMELSBACH, Frank [DE/DE]; Ahornweg 16, D-88441 Mittelbiberach (DE). LANGKOPF, Elke [DE/DE]; Im Schloss 3, D-88447 Warthausen (DE). BLECH, Stefan [DE/DE]; Müllerweg 9, D-88447 Warthausen (DE). JUNG, Birgit [DE/DE]; Mühlstrasse 23, D-55270 Schwabenheim (DE). METZ, Thomas [DE/AT]; Traungasse 6/5, A-1030 Vienna (AT). SOLCA, Flavio [CH/AT]; Fimbingergasse 1/9, A-1230 Vienna (AT).

(74) Agent: LAUDIEN, Dieter; Boehringer Ingelheim GmbH, B Patente, D-55216 Ingelheim/Rhein (DE).

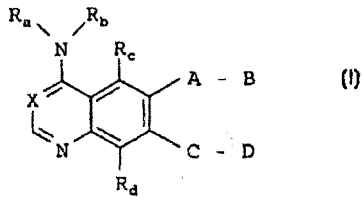
(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: BICYCLIC HETEROCYCLES, PHARMACEUTICAL COMPOSITIONS CONTAINING THESE COMPOUNDS, AND PROCESSES FOR PREPARING THEM



(I)

(57) Abstract

The present invention relates to bicyclic heterocyclic compounds of general formula (I), wherein R_a to R_d, A to D and X are defined as in claims 1 to 8, the tautomers, stereoisomers and salts thereof, particularly the physiologically acceptable salts thereof with inorganic or organic acids or bases which have valuable pharmacological properties, particularly an inhibitory effect on signal transduction mediated by tyrosine kinases, their use in treating diseases, particularly tumour diseases, diseases of the lung and airways and the preparation thereof.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
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(51) International Patent Classification[7]: C07D 413/12, 403/12, 401/12, 235/06, A61K 31/505, A61P 35/00

(21) International Application Number: PCT/GB01/02424

(22) International Filing Date: 1 June 2001 (01.06.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

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01400297.6	7 February 2001 (07.02.2001)	EP
01400565.6	5 March 2001 (05.03.2001)	EP

(71) Applicant *(for all designated States except MG, US)*: **ASTRAZENECA AB** [SE/SE]; S-151 85 Sodertalje (SE).

(71) Applicant *(for MG only)*: **ASTRAZENECA UK LIMITED** [GB/GB]; 15 Stanhope Gate, London W1Y 6LN (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **HENNEQUIN, Laurent, François, André** [FR/FR]; Z.I. La Pompelle, Boîte Postale 1050, F-51689 Reims Cedex 2 (FR). **PLE, Patrick** [FR/FR]; Z.I. La Pompelle, Boîte postale 1050, F-51689 Reims Cedex 2 (FR).

(74) Agent: **TAIT, Brian, Steele**; Astrazeneca, Global Intellectual Property, P.O. Box 272, Mereside, Alderley Park, Macclesfield, Cheshire, SK10 4GR (GB).

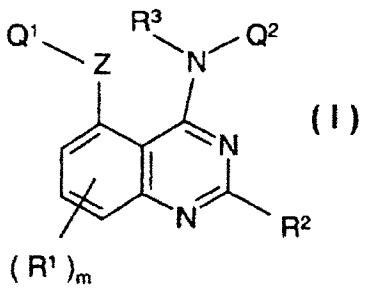
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: QUINAZOLINE DERIVATIVES FOR THE TREATMENT OF TUMOURS



(I)

(57) Abstract: The invention concerns quinazoline derivatives of Formula (I) wherein each of Q^1, Z, m, R^1, R^2, R^3 and Q^2 have any of the meanings defined in the description; processes for their preparation, pharmaceutical compositions containing them and their use in the manufacture of a medicament for use as an anti-invasive agent in the containment and/or treatment of solid tumour disease.

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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(30) Priority Data:
01401222.3 14 May 2001 (14.05.2001) EP

(71) Applicant *(for all designated States except MG, US)*: **ASTRAZENECA AB** [SE/SE]; Sodertalje, S-151 85 (SE).

(71) Applicant *(for MG only)*: **ASTRAZENECA UK LIMITED** [GB/GB]; 15 Stanhope Gate, London, Greater London W1Y 6LN (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **HENNEQUIN, Laurent, Francois, Andre** [FR/GB]; Alderley Park, Macclesfield, Cheshire SK10 4TG (GB). **PLE, Patrick** [FR/FR]; Z.I. La Pompelle, BP 1050, F-51689 Reims Cedex 2 (FR).

(74) Agent: **TAIT, BRIAN, STEELE et al**; ASTRAZENECA, Global Intellectual Property, Mereside, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB).

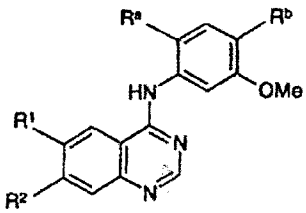
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: QUINAZOLINE DERIVATIVES



(I)

(57) Abstract: The invention concerns quinazoline derivatives of Formula I, wherein each of R^1, R^2, R^a and R^b have any of the meanings defined in the description; processes for their preparation, pharmaceutical compositions containing them and their use in the manufacture of a medicament for use as an anti-invasive agent in the containment and/or treatment of solid tumour disease.

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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(51) International Patent Classification[7]: C07D 401/12, A61P 9/00, 35/00

(21) International Application Number: PCT/GB00/04181

(22) International Filing Date:
1 November 2000 (01.11.2000)

(25) Filing Language: English

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(30) Priority Data:
99402759.7 5 November 1999 (05.11.1999) EP
99402877.7 19 November 1999 (19.11.1999) EP

(71) Applicant *(for all designated States except MG, US)*: **ASTRAZENECA AB** [SE/SE]; S-151 85 Sodertalje (SE).

(71) Applicant *(for MG only)*: **ASTRAZENECA UK LIMITED** [GB/GB]; 15 Stanhope Gate, London W1Y 6LN (GB).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **HENNEQUIN, Laurent, François, André** [FR/FR]; Z.I. La Pompelle, Boîte postale 1050, F-51689 Reims Cedex 2 (FR). **STOKES, Elaine, Sophie, Elizabeth** [GB/GB]; Mereside, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB). **THOMAS, Andrew, Peter** [GB/GB]; Mereside, Alderley Park, Macclesfield, Cheshire SK10 4TG (GB).

(74) Agent: **PHILLIPS, Neil, Godfrey, Alasdair**; AstraZeneca, Global Intellectual Property, P.O. Box 272, Mereside, Alderley Park, Macclesfield, Cheshire SK10 4GR (GB).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
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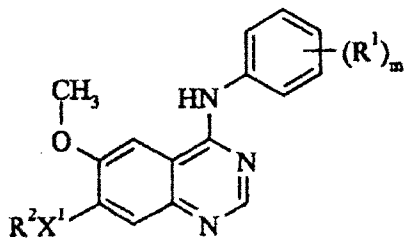
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: QUINAZOLINE DERIVATIVES AS VEGF INHIBITORS



(I)

(57) Abstract: The invention relates to quinazoline derivatives of formula (I), wherein m is an integer from 1 to 3; R^1 represents halogeno or C_{1-3}alkyl; X^1 represents -O-; R^2 is selected from one of the following three groups: 1) C_{1-5}alkylR^3 (wherein R^3 is piperidin-4-yl which may bear one or two substituents selected from hydroxy, halogeno, C_{1-4}alkyl, C_{1-4}hydroxyalkyl and C_{1-4}alkoxy; 2) C_{2-5}alkenylR^3 (wherein R^3 is as defined hereinbefore); 3) C_{2-5}alkynylR^3 (wherein R^3 is as defined hereinbefore); and wherein any alkyl, alkenyl or alkynyl group may bear one or more substituents selected from hydroxy, halogeno and amino; and salts thereof; processes for their preparation, pharmaceutical compositions containing a compound of formula (I) or a pharmaceutically acceptable salt thereof as active ingredient. The compounds of formula (I) and the pharmaceutically acceptable salts thereof inhibit the effects of VEGF, a property of value in the treatment of a number of disease states including cancer and rheumatoid arthritis.

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	Applicants: **HENNEQUIN *et al.***	
	Filing Date: **March 15, 2006**	Group Art Unit: **Unassigned**

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	1.	US 20020049197	April 25, 2002	Himmelsbach et al.	514	217.06	August 23, 2001
	2.	US 20020082270	June 27, 2002	Himmelsbach et al.	514	266.2	August 22, 2001
	3.	US 20020082271	June 27, 2002	Himmelsbach et al.	514	266.24	August 22, 2001
	4.	US 20020128553	September 12, 2002	Mishani et al.	600	431	March 12, 2001
	5.	US 20020169180	November 14, 2002	Himmelsbach et al.	514	266.4	December 10, 2001
	6.	US 20020173509	November 21, 2002	Himmelsbach et al.	514	234.5	December 17, 2001
	7.	US 20020177601	November 28, 2002	Himmelsbach et al.	514	266.2	August 23, 2001
	8.	US 20030149062	August 7, 2003	Jung et al.	514	266.22	January 29, 2003
	9.	US 20030158196	August 21, 2003	Jung et al.	514	234.2	February 7, 2003
	10.	US 20030225079	December 4, 2003	Singer et al.	514	233.8	May 8, 2003
	11.	US 20040044014	March 4, 2004	Himmelsbach et al.	514	266.4	April 17, 2003
	12.	US 20040048880	March 11, 2004	Himmelsbach et al.	514	266.2	March 27, 2003
	13.	US 20040176361	September 9, 2004	Fujio et al.	514	224.2	February 24, 2004
	14.	US 20050148607	July 7, 2005	Suzuki et al.	514	264.11	June 3, 2003
	15.	US 20050165035	July 28, 2005	Bradbury et al.	514	266.22	June 1, 2004
	16.	US 3,812,257	May 21, 1974	Yamamoto	514	266.21	April 7, 1972
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	18.	US 4,335,127	June 15, 1982	Vandenberk et al.	514	266.22	October 12, 1979
	19.	US 4,921,863	May 1, 1990	Sugimoto et al.	514	319	February 17, 1988
	20.	US 5,411,963	May 2, 1995	Dreikorn et al.	514	266.3	July 19, 1993
	21.	US 5,457,105	October 10, 1995	Barker	514	234.5	August 2, 1994
	22.	US 5,616,582	April 1, 1997	Barker	514	234.5	June 15, 1995
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	24.	US 5,770,599	June 23, 1998	Gibson	514	228.2	April 26, 1996
	25.	US 5,817,678	October 6, 1998	Kim et al.	514	326	November 15, 1996
	26.	US 6,127,366	October 3, 2000	Kim et al.	514	235.5	October 5, 1998
	27.	US 6,177,433	January 23, 2001	Uckun et al.	514	266.4	November 19, 1999
	28.	US 6,200,976	March 13, 2001	Ries et al.	514	249	March 29, 1999
	29.	US 6,297,258	October 2, 2001	Wissner et al.	514	313	August 1, 2000
	30.	US 6,313,127	November 6, 2001	Waterson et al.	514	253.01	July 31, 1998
	31.	US 6,541,491	April 1, 2003	Davies et al.	514	340	November 30, 2000
	32.	US 6,562,319	May 13, 2003	Mishani et al.	424	1.81	March 12, 2001
	33.	US 6,617,329	September 9, 2003	Himmelsbach et al.	514	252.14	August 23, 2001
	34.	US 6,653,305	November 25, 2003	Himmelsbach et al.	514	233.5	August 15, 2001

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	Filing Date: **March 15, 2006**	Group Art Unit: **Unassigned**

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	36.	US 6,740,651	May 25, 2004	Himmelsbach et al.	514	228.8	August 22, 2001
	37.	US 6,972,288	December 6, 2005	Himmelsbach et al.	514	234.8	February 6, 2002

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	38.	DE 19908567	August 31, 2000	Germany	Boehringer Ingelheim Pharma KG	US 6,972,288
	39.	EP 0 288 563	May 11, 1994	EPO	Eisai Co., Ltd.	
	40.	EP 0 566 226	November 8, 1995	EPO	Zeneca Limited	
	41.	EP 0 585 371	April 17, 2002	EPO	Rhone-Poulenc Rorer Int.(Holdings) Inc.	
	42.	EP 0 669 324	August 30, 1995	EPO	Eisai Co., Ltd.	
	43.	EP 0 837 063	April 22, 1998	EPO	Pfizer Inc.	
	44.	EP 1 044 969	October 18, 2000	EPO	Pfizer Products Inc.	
	45.	EP 1 230 919	August 14, 2002	EPO	Warner-Lambert Company	
	46.	EP 1 369 418	December 10, 2003	EPO	Mitsubishi Pharma Corporation	
	47.	EP 1 548 008	June 29, 2005	EPO	Kirin Beer Kabushiki Kaisha	
	48.	GB 2,295,387	May 29, 1996	United Kingdom	Glaxo Inc.	
	49.	WO 88/02365	April 7, 1988	WIPO	EISAI Co., Ltd. Et al.	US 4,921,863
	50.	WO 92/20642	November 26, 1992	WIPO	Rhone-Poulenc Rorer Int.(Holdings) Inc.	
	51.	WO 95/00146	January 5, 1995	WIPO	Rhone-Poulenc Rorer Pharm. Inc.	
	52.	WO 95/15758	June 15, 1995	WIPO	Rhone-Poulenc Rorer Pharma. Inc.	
	53.	WO 96/09294	March 28, 1996	WIPO	The Wellcome Foundation Limited	
	54.	WO 96/30347	October 3, 1996	WIPO	Pfizer Inc.	
	55.	WO 96/33977	October 31, 1996	WIPO	Zeneca Limited	
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	60.	WO 96/39145	December 12, 1996	WIPO	Rhone-Poulenc Rorer Pharma. Inc.	
	61.	WO 97/03069	January 30, 1997	WIPO	Glaxo Group Limited	
	62.	WO 97/06138	February 20, 1997	WIPO	Zeneca Limited	
	63.	WO 97/18813	May 29, 1997	WIPO	Merck & Co., Inc.	
	64.	WO 97/22596	June 26, 1997	WIPO	Zeneca Limited et al.	
	65.	WO 97/28128	August 7, 1997	WIPO	Zeneca Limited	
	66.	WO 97/30034	August 21, 1997	WIPO	Zeneca Limited	
	67.	WO 97/30035	August 21, 1997	WIPO	Zeneca Limited et al.	
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	70.	WO 97/38983	October 23, 1997	WIPO	Warner-Lambert Company	
	71.	WO 97/38994	October 23, 1997	WIPO	Zeneca Limited	
	72.	WO 98/02434	January 22, 1998	WIPO	Glaxo Group Limited	
	73.	WO 98/13354	April 2, 1998	WIPO	Zeneca Limited et al.	
	74.	WO 98/38984	September 11, 1998	WIPO	Sugen Inc.	
	75.	WO 99/06378	February 11, 1999	WIPO	Warner-Lambert Company	
	76.	WO 99/35132	July 15, 1999	WIPO	Glaxo Group Limited	
	77.	WO 99/54313	October 28, 1999	WIPO	Boehringer Ingelheim Pharma KG	US 6,200,976
	78.	WO 00/10981	March 2, 2000	WIPO	Parker Hughes Institute	
	79.	WO 00/12497	March 9, 2000	WIPO	Scios Inc.	
	80.	WO 00/18740	April 6, 2000	WIPO	American Cyanamid Company	
	81.	WO 00/20402	April 13, 2000	WIPO	Zeneca Limited	
	82.	WO 00/21955	April 20, 2000	WIPO	Zeneca Limited et al.	
	83.	WO 00/24718	May 4, 2000	WIPO	Akzo Nobel N.V.	
	84.	WO 00/31048	June 2, 2000	WIPO	Warner-Lambert Company	
	85.	WO 00/44728	August 3, 2000	WIPO	Pfizer Products Inc.	
	86.	WO 00/47212	August 17, 2000	WIPO	Zeneca-Pharma S.A.	
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	90.	WO 00/78735	December 28, 2000	WIPO	Boehringer Ingelheim Pharma KG	US 20020169180
	91.	WO 01/07432	February 1, 2001	WIPO	SmithKline Beecham PLC	
	92.	WO 01/19788	March 22, 2001	WIPO	Cor Therapeutics Inc.	
	93.	WO 01/21594	March 29, 2001	WIPO	AstraZeneca AB et al.	
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	99.	WO 01/94341	December 13, 2001	WIPO	AstraZeneca AB et al.	
	100.	WO 01/98277	December 27, 2001	WIPO	Pfizer Products Inc.	
	101.	WO 02/16352	February 28, 2002	WIPO	AstraZeneca AB et al.	
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	105.	WO 02/18373	March 7, 2002	WIPO	Boehringer Ingelheim Pharma KG	US 6,653,305
	106.	WO 02/18376	March 7, 2002	WIPO	Boehringer Ingelheim Pharma KG	US 6,740,651
	107.	WO 02/24684	March 28, 2002	WIPO	SmithKline Beecham PLC	
	108.	WO 02/30924	April 18, 2002	WIPO	AstraZeneca AB et al.	
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	112.	WO 02/48117	June 20, 2002	WIPO	Fujisawa Pharmaceutical Co., Ltd.	
	113.	WO 02/50043	June 27, 2002	WIPO	Boehringer Ingelheim Pharma KG	US 20020173509
	114.	WO 02/056882	July 25, 2002	WIPO	SmithKline Beecham PLC	
	115.	WO 02/066445	August 29, 2002	WIPO	Mitsubishi Pharma Corporation	EP 1 369 418
	116.	WO 02/068409	September 6, 2002	WIPO	Merck & Co. Inc.	
	117.	WO 02/073235	September 19, 2002	WIPO	Yissum Research Development et al.	
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	119.	WO 02/092577	November 21, 2002	WIPO	AstraZeneca AB et al.	
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	121.	WO 02/097490	December 5, 2002	WIPO	Lnl Technologies Canada Inc.	
	122.	WO 02/102315	December 27, 2002	WIPO	Bristol-Myers Squibb Company	
	123.	WO 03/000188	January 3, 2003	WIPO	Ariad Pharmaceuticals Inc.	
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	132.	WO 03/082290	October 9, 2003	WIPO	Boehringer Ingelheim Pharma GmbH…	US 20040048880
	133.	WO 03/082831	October 9, 2003	WIPO	Boehringer Ingelheim Pharma GmbH…	
	134.	WO 03/089439	October 30, 2003	WIPO	Boehringer Ingelheim Pharma GmbH…	US 20040044014
	135.	WO 03/094921	November 20, 2003	WIPO	Boehringer Ingelheim Pharma GmbH…	US 20030225079
	136.	WO 03/099276	December 4, 2003	WIPO	Bristol-Myers Squibb Company	

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	140.	WO 2004/096226	November 11, 2004	WIPO	AstraZeneca AB et al.	
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	154.	Tsou et al. "6-Substituted-4-(3-bromophenylamino)quinazolines as Putative Irreversible Inhibitors of the Epidermal Growth Factor Receptor (EGFR) and Human Epidermal Growth Factor Receptor (HER-2) Tyrosine Kinases with Enhanced Antitumor Activity" J. Med. Chem. 44:2719-2734 (2001)
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